TITS-SKVORTSOVA, I. N.; LEONOVA, A. I.; LEVINA, S. Ya.; KARESEVA, Ye. A.

Catalysis

Catalytic transformations of thiophenol, dithioresorcinol, thianthrene, and dephenysulfide over an aluminosilicate catalyst. Zhur. ob. khim. 23, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

KARESZ, Jan

Automatic regulation of tempering chambers in a fiber board plant.
Przem drzew 12 no.12:10 '61.

(Tempering)

ACC NR: AP7004199 SOURCE CODE: UR/0125/67/000/001/0056/0058

AUTHOR: Kareta, N. L.; Nefedov, N. N.

ORG: Electric Welding Institute im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki AN UkrSSR)

TITLE: Welding of graphite materials

SOURCE: Avtomaticheskaya svarka, no. 1, 1967, 56-58

TOPIC TAGS: graphite, ~~material, material~~ METAL joining, electric arc welding, diffusion bonding, bonding technology, ~~bonded joint strength~~, BUTT WELDING, CONSUMABLE ELECTRODE, BONDING PROPERTY, DIFFUSION WELDING

ABSTRACT: Two 10 mm-thick graphite plates with flat end faces placed 1 mm from each other were butt welded using a consumable graphite electrode 15 mm in diameter and a straight-polarity d-c current of 200 amp at 60 v. The welding was done in air at a pressure of 120—180 atm and at a welding speed of 1.5 m/hr. The graphite of the joint had a sharply defined columnar structure and a very low strength. The strength of the joint was significantly increased by using silicon-impregnated graphite as a filler material, but the resulting weld strength was still too low for practical

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UDC: 621.791.752

ACC NR: AP7004199

purposes. Similar unsatisfactory results were obtained in diffusion bonding of 10 mm-thick plates of 30PG and 50PG graphite, anode-grade graphite, and EGO electrode-grade graphite. The graphite plates were electrically heated to 1500—4000C and pressed against each other with a force of 1 kg/mm^2. Satisfactory results were obtained in diffusion bonding with a titanium, zirconium, niobium, tantalum or hafnium insert between the graphite plates to be jointed. The plates were heated to 2300—3000C in an inert gas by a current at a density of 7—14 amp/cm^2 and held against each other under a pressure of up to 1 kg/mm^2 for 3—6 min. The joint had a eutectic structure consisting of graphite and metal carbide. The strength of the joint depended on the depth of penetration of metal into graphite, and the joint failed along the base material if the metal penetrated to a depth of 1.5—2 mm. The joints of EGO electrode graphite, anodic graphite, and graphite densified with pyrographite, diffusion bonded with a zirconium insert 0.1—0.15 mm thick, had at 2500C a tensile strength of 158, 156 and 498 kg/cm^2, respectively. In tension and bending tests at room temperature, the joints failed along the base material. Orig. art. has: 3 figures and 1 table. [MS]

SUB CODE: 11, 13/ SUBM DATE: 19Apr66/ ORIG REF: 003/ ATD PRESS: 5116

Card 2/2

AUTHOR: Kasatkin, B.S., Kareta, N.L. and Darevskiy, G.F. SOV-125-58-2-4/11

TITLE: Fine Structure and Its Effect on the Toughness of Weld Joints (Tonkaya struktura i yeyë vliyaniye na udarnuyu vyazkost' svarnykh shvov)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 2, pp 20-29 (USSR)

ABSTRACT: Experimental investigations of fine structure in low-carbon and low-alloy weld joints were carried out with the use of an electronic microscope, permitting direct observation of the inner structure of the metal grains and revealing some peculiarities which could not be detected by X-ray examinations. The article contains a detailed description of the experiments and of the results obtained which lead to the following conclusions: 1) conditions of the welding process have a substantial effect on the inner structure of grains; 2) increased cooling rates entail higher stresses of II and III order, reduction of size and chemical heterogeneity of blocks of the intragranular structure; 3) slow cooled weld metal is characterized by the most perfect ferrite grain blocks approaching symmetrical shape; 4) the critical temperature of the seam brittleness is determined by the

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Fine Structure and Its Effect on the Toughness of Weld Joints

peculiarities of structure and the properties of submicro-zones (blocks) and microzones (grains); 5) inner stresses of II and III order are of a secondary effect, as they influence the plastic deformation process which preceeds the formation of microcracks.
There are 2 graphs, 3 tables, 5 micro-photos and 12 references, 10 of which are Soviet, 1 English and 1 German.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona, AN USSR (Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: September 10, 1957

1. Welds--Structural analysis

SOV/125-58-12-2/13

AUTHORS: Kasatkin, B.S., Karota, N.L., Vakhnin, Yu.N., and German, S.I.

TITLE: The "White" Band in "15KhlMlF" Grade Welded Joints ("Belaya" poloska v svarnykh soyedineniyakh iz stali 15KhlMlF)

PERIODICAL: Avtomaticheskaya svarka, 1958, Nr 12, pp 12-16 (USSR)

ABSTRACT: Tests were carried out for the purpose of determining the origin of the so-called "white" band in weld joints near seams which are subjected to various structural deformations, particularly noticeable in etching with nitric acid. It was stated that the white strip formation depends on residual plastic deformations in heat zones below the Ac_1 point. The white strip metal has a deformed crystalline lattice and an increased carbon and nitrogen content in the solid solution. The formation of the white band and ageing zone are of a similar nature, depending mainly on residual plastic deformation and not on the high cooling rate from temperatures below Ac_1.
There are 3 sets of microphotos, 2 tables and 6 Soviet references.

Card 1/2

The "White" Strip in "15KhlMlF" Grade Steel Joints SOV/125-58-12-2/13

ASSOCIATIONS: Institut elektrosvarki imeni Ye.O. Patona (Institute of Electric Welding imeni Ye.O. Paton). Khar'kovskiy turbinnyy zavod imeni Kirova (The Kharkov Turbine Plant imeni Kirov)

SUBMITTED: August 21, 1958

Card 2/2

KOSTETSKIY, B.I.; NOSOVSKIY, I.G.; TOPEKHA, P.K.; TROTSIK, O.I.; KARETA, N.L.

X-ray investigation of the structure of friction surfaces. Fiz. met. i metalloved. 7 no.1:95-101 Ja '59. (MIRA 12:4)

1. Kiyevskiy institut grazhdanskogo vozdushnogo flota.
(Steel--Metallography) (Surfaces (Technology))

18(7)
AUTHOR: Kareta, N.L.

SOV/125-59-8-5/18

TITLE: A Study of Creep in the Metal of Welded Joints of Heat-Resistant Steels; II. On Breakdown of the Basic Metal and the Metal of the Seam on 15KhMA and 20KhMF Steels

PERIODICAL: Avtomatichskaya svarka, 1959, Nr 8, pp 41-48 (USSR)

ABSTRACT: The article is devoted to study of the mechanism of creep in the metal of welded joints of 15KhMA and 20KhMF steels. The author opens with a note on materials and methods used in this study. The seams studied were made by automatic electric welding in a carbonic gas medium /Refs 2,3/; chemical composition of the basic metals and seams is presented (Table 1). The object of this study was the microstructure of the metal; radiographic measurement of grain size and micro-radiographic study of the density of the metal was done. Quantitative evaluation of the process of fragmentation of the ferrite grain was also done radiographically. This method was preferred because

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A Study of Creep in the Metal of Welded Joints of Heat-Resistant Steels; II. On Breakdown of the Basic Metal and the Metal of the Seam on 15KhMA and 20KhMF Steels

it gave averaged data for a large number of grains, considered important in view of the observed heterogeneity of the plastic deformation of creep. The method of making X-ray photographs, and the factors involved are outlined; a standard metal sample with a known size of grain was used. The micro-radiographic method of studying chemical heterogeneities in the metal is also discussed. For micro-radiographic study thin plates of the metal 0.04-0.10 mm thick were prepared. Fine grain MK photographic plates of NIKFI manufacture, and a sharp focus tube with a chrome anti-cathode were used. Conditions and results of the tests are presented (Table 2). Under conditions of creep in 15KhMA and 20KhMF steels, and in the metal of the seams, 2 types of breakdown are observed - inter-granular and intra-granular. Large rates of creep cause intra-granular breakdown with the formation of "necks", and low creep rates - inter-granular

A Study of Creep in the Metal of Welded Joints of Heat-Resistant Steels; II. On Breakdown of the Basic Metal and the Metal of the Seam on 15KhMA and 20KhMF Steels

breakdown with almost no "neck" formation, and with small residual elongation of the samples. In samples with intra-granular breakdown grain size was not considered measurable; grain size was estimated to be less than 1 micron. Measurement of the grain size in the seam metal on 20KhMF steel was also considered impossible due to the small original size of the grain. A characteristic change in the microstructure of samples showing granular boundary breakdown in the basic and seam metals in both types of steel is expansion of the grain boundaries, and the formation of cracks on these boundaries. The author discusses some particulars of the results with special regard to plastic deformation, inter- and intra-granular breakdown, changes in density, and the formation of cracks on grain boundaries in the presence, and as a result of boundary slip. The work of I.A. Oding and V.A. Ivanova [Ref 8], and C. Zener [Ref 10] on crack formation

A Study of Creep in the Metal of Welded Joints of Heat-Resistant Steels; II. On Breakdown of the Basic Metal and the Metal of the Seam on 15KhMA and 20KhMF Steels

is mentioned; the author finds Oding's and Ivanova's thesis on the mechanism of the breakdown of metals under conditions of creep, based on the notion of the growth of cracks in consequence of an accumulation of voids caused by plastic deformation, unacceptable. In conclusion the author notes: 1) typical breakdown for the materials studied, in conditions of extended service, is inter-granular breakdown which takes place under conditions of slip along the grain boundaries and accumulation of voids on the forming micro-cracks; 2) experiments on the extended durability of these steels and the seam metal on them must be carried out under conditions assuring inter-granular breakdown in the samples, otherwise false results will almost certainly be obtained.

SOV/125-59-8-5/18

A Study of Creep in the Metal of Welded Joints of Heat-Resistant Steels; II. On Breakdown of the Basic Metal and the Metal of the Seam on 15KhMA and 20KhMF Steels

There are 4 photographs, 2 tables, 1 diagram, and 10 references, 5 of which are Soviet and 5 English.

ASSOCIATION: Ordena trudovogo krasnogo znameni - Institut elektrosvarki imeni Ye.O. Patona AN USSR (Order of the Red Banner of Labor - Institute of Electric Welding imeni Ye.O. Paton, AS UkrSSR)

SUBMITTED: March 3, 1959

Card 5/5

18(7)
AUTHOR: Kareta, N.L., Engineer

SOV/125-12-6-1/14

TITLE: Investigation of Creep in the Metal of Welded Joints of Thermal Stable Steel.Report I. Investigation of Structural Changes in the Steel 15 KhMA.

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 6 (75), pp 3-11 (USSR)

ABSTRACT: The article presents the first results of an investigation of creep in the metal of welds of termal stable investigated in welded joints of those tube parts, which are working at temperature up to 500°C. The chemical analysis of the tested steel was as follows: 0.11% C, 0.63% Mn, 0.20% Si, 0.92% Cr, 0.60% Mo, 0,007% S and 0.019% P. The test on creep was done with standardized samples of 7 mm diameter at the working part and of 70 mm length. For the test a machine of type MP-3 was used. The test-temperatures were 500,550 and 590°C. The greater part of the samples were tested until destruction, the tests of others were interrupted for several hundred or thousand hours. Four samples

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Investigation of Creep in the Metal of Welded Joints of Thermal Stable Steel. Report I. Investigation of Structural Changes in the Steel 15 KhMA.

were tested by X-ray. The exact test-conditions of samples are given in schedule 1. The results of the X-ray tests showed, that the creep of steel type 15 KhMA is accompanied by a strong crushing of ferrite grain. The macroscopical location of plastic deformation was shown by V.S. Ivanova (Ref. 3). The plastic deformation of creep under the described test condition takes place mainly via graduated formation and polygonization. The dependance between these two processes can be explained as a special dislocating, diffusing mechanism of plastic deformation. The absence of a distortion of the grating during creep has shown the described mechanism of plastic deformation as a natural consequence. The development in the ferrite grains of the sub-structure coincides with a reinforcing of the steel. There are 3 photographs, 1 graph and 13 references, 8 of which are Soviet and 5 English.

SOV/125-12-6-1/14

Investigation of Creep in the Metal of Welded Joints of Thermal Stable Steel. Report I. Investigation of Structural Changes in the Steel 15 KhMA.

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki imeni Ye.O. Patona AN USSR(Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR of the Order of the Red Banner of Labor).

SUBMITTED: July 20, 1958

Card 3/3

KARETA, N.L., Cand Tech Sci -- (diss) "Research into the creep of the metal of welded assemblies of heat-resistant steels." Kiev, 1960. 17 pp; with illustrations; (Academy of Sciences Ukrainian SSR, Order of Labor Red Banner Inst of Electrowelding im Ye. O. Paton); 170 copies; price not given; (KL, 22-60, 137)

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SOV/125-60-2-6/21

AUTHOR: Kareta, N.L.

TITLE: A Study of Creep in Heat-Resistant Steel Joints. Information III. Peculiarities of Weld Creep in "15KhMA" and "20KhMF" Steels

PERIODICAL: Avtomaticheskaya svarka, 1960, Nr 2, pp 62-65 (USSR)

ABSTRACT: In previous works it has been shown [Ref. 1 and 2] that welds made on "15KhMA" and "20KhMF" steels, using automatic welding in a carbon dioxide gas medium, have a higher creep resistance than the metal itself. The chemical composition of both steel grades and of the welds is given (Table p 62), and it can be seen that, in comparison with the basic metal, the weld metal contains less carbon, slightly less molybdenum, but a greater concentration of manganese and silicon. Metallographic investigations revealed that the weld on "15KhMA" steel after annealing had a columnar

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A Study of Creep in Heat-Resistant Steel Joints. Information III. Peculiarities of Weld Creep in "15KhMA" and "20KhMF" Steels

structure with sorbite-like pearlite, and the weld on "20KhMF" steel consisted of fine grains and evenly distributed dispersed carbides (Figure 1). The peculiar feature of the microstructure of the weld metal is the presence of fine subboundaries in ferrite grains, which are also present in the heat-affected zone, but absent in the basic metal. It was assumed that this substructure forms as a result of plastic deformation during shrinkage at high temperatures, and the steel structure was studied after hot tension and after the annealing of cold-deformed metal, and substructures similar to the ones in the weld metal were found (Figure 2). The investigation results and data obtained from other works [Ref. 5 and 6 (N.F. Mott)] lead to the following conclusions: 1) The substructure in welds and in the heat-affected zone in the mentioned steel grades forms in

A Study of Creep in Heat-Resistant Steel Joints. Information III. Peculiarities of Weld Creep in "15KhMA" and "20KhMF" Steels

the process of plastic deformation during cooling after welding. 2) The substructure considerably increases the heat resistance, suppresses the not yet stabilized creep, and very considerably reduces the rate of stabilized creep. 3) The grain subboundaries obstruct the "fine" grain shifts and so prevent separate dislocations. There are 3 photographs, 2 graphs, 1 table, and 6 references, of which 5 are Soviet, and 1 English.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR(Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton of the AS UkrSSR).

SUBMITTED: October 8, 1959.

18.8260
1.2360 also 1573

21906
S/125/60/000/011/001/016
A161/A133

AUTHORS: Kareta, N.L., and Makara, A.M.

TITLE: X-Ray measurements of first order residual stresses in the heat-affected zone of welds on hardening steel

PERIODICAL: Avtomaticheskaya svarka, no. 11, 1960, 3-9

TEXT: The article contains brief general information on X-ray measurements of residual welding stresses in the heat-affected zone of common steel, and a detailed description of a new method developed for such measurements in hardening steel, called "method naplavlennykh datchikov" ("Built-up strain gage method"). Two X-ray photographs have to be prepared - at right angles, and with a slanting angle relative to the surface in the stress direction. The interplane distances $d_{\perp}$ and d_{ψ} are found from the pictures, and they are not equal in the presence of residual stresses of first order. Stress is calculated using the formula (Ref.7):

X-Ray measurements of first order...

$$\sigma\varphi = \frac{d\psi - d_{\perp}}{d_{\perp}} \cdot \frac{E}{1 + \nu} \cdot \frac{1}{\sin^2\psi} \qquad (1)$$

where E is the Young modulus; ν - the Poisson coefficient; ψ - the angle between the X-ray and the normal to the specimen surface in inclined X-ray picture. The formula (1) can be transformed:

$$\sigma\varphi = B(L\psi - L_{\perp});$$

$$\frac{ctg\,\theta \cos^2 (180^0 - 2\theta)}{4R} \cdot \frac{E}{1 \times \nu} \cdot \frac{1}{\sin^2\psi} \qquad (2)$$

where $L\psi$ and $L_{\perp}$ are the diffraction ring diameters at inclined and perpendicular X-raying; θ - the Wolf-Bregg angle; and R the distance from the specimen to the film. The B value is determined by the photographing conditions that are constant, and it has a numerical value. This makes the formula (2) very handy in practical work. The accuracy of stress measurements depends on the θ and ψ angles, the R distance, and the elastic properties of the metal. It is obvious that the θ angle should be as large as possible. In the case of ferritic steel it is better to use the reflection (310) of $K_{\alpha}Co$ (θ =

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80°40'), and in the case of austenitic steel the reflection (220) of $K_{\alpha}V$ radiation ($\theta = 80°10'$). The ψ angle should be as large as possible. Still, the interference lines are diffused through absorption at a too large ψ angle, and it is therefore recommended to use ψ of about 45° and not larger. The distance from specimen to film is to be chosen so as to increase the accuracy at practically possible exposition time. Tests of specimens proved that X-raying is only applicable for approximate stress measurements in common carbon steel; in hardening 35Х3Н3М (35Kh3N3M) steel the measurements were impossible because of diffused interference lines. The "built-up strain gage method" had been suggested after failure with measurements in hardening steel, and was a success. Its essence is the following. Grooves 10 mm deep and 1 - 1.5 mm wide were cut in the metal, and УОНИ-13/45 (UONI-13/45) 3 mm electrodes fused into the grooves using welding current not exceeding 90 amp. The fused metal had a low carbon and alloying element content and did not harden in the subsequent welding process. The X-ray pictures in the heat-affected metal with the "gages" were clear (Fig.2,b), and the distance between the lines could be measured with an accuracy usual for the X-ray method. The method is applicable for measuring stresses not exceeding 40-50 kg/mm^2, for the "gage" metal flows at higher stresses. A curve shows the longitudinal

S/125/60/000/011/001/016
A161/A133

X-Ray measurements of first order...

stress distribution in an austenite steel butt joint (Fig.4) measured by the new method and with two others for comparison. It is an advantage of the new method that it makes the observation of changing stresses possible during relaxation process after hardening. It is expected that the X-ray method will come into use for studies of hardening processes in metals. There are 4 figures and 8 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.Ye. O.Patona AN USSR ("Order of the Red Banner of Labor" Electric Welding Institute im.Ye.O.Paton of the Academy of Sciences of the Ukrainskaya SSR)

SUBMITTED: July 16, 1960

L 23415-66 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k) IJP(c) JD/HW/HW/EM

ACC NR: AP6004137 (N) SOURCE CODE: UR/0125/66/000/001/0034/0039

AUTHOR: Zhemchuzhnikov, G. V.; Girenko, V. S.; Kareta, N. L.; Kotenko, E. V.

ORG: Institute of Electric Welding im. Ye. O. Paton, AN UkrSSR (Institut elektrosvarki)

TITLE: Effect of stress concentrators on the strength of steel following preliminary deformation and aging

SOURCE: Avtomaticheskaya svarka, no. 1, 1966, 34-39

TOPIC TAGS: stress concentration, low carbon steel, low alloy steel, plastic deformation, metal aging, brittleness

ABSTRACT: The brittle cracks arising in metal structure under the action of static loads in most cases originate from structural or technological stress concentrators and hence in recent years special attention has been paid to research into the effect of notching on brittle strength. This is particularly important considering that work hardening due to the welding, straightening or overloading of the structural elements and the concomitant aging of the metal, although it greatly affects the susceptibility of steel to geometric stress concentrators, has previously been relatively uninvestigated although it is an important factor in structural strength. On the basis of tensile tests of notched specimens of rimmed low-carbon sheet steel at from +30 to

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UDC: 621.791.762:539.56:669.140

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ACC NR: AP6004137

-190°C it is established that the transition from ductile (fibrous) to brittle fracture (at +20°C) is not accompanied by any significant decrease in strength: if the loading is applied uniformly, the rated rupture stresses remain above the yield point. This implies that the ductile-to-brittle transition temperature is far from always dangerous. The critical temperature at which rated strength sharply decreases (in the above case, -70°C) is several tens of degrees lower than the transition temperature, and for most grades of low-carbon and low-alloy steels this critical temperature is below -60°C. This means that when in natural state (in the form of structural elements at normal temperatures of the atmosphere) these steels are sufficiently resistant to brittle cracking. Work hardening and the attendant aging, however, may markedly enhance the brittleness of steel and displace the threshold of rated strength in the direction of positive temperatures, as established by preliminary 10% plastic deformation of notched specimens with their subsequent furnace aging at up to +250°C for 2 hr. Thus, preliminary deformation at 100-250°C causes particularly marked embrittlement: the critical temperature of transition from ductile to brittle fracture rises nearly 100°C as compared with metal in natural state. Orig. art. has: 3 tables, 6 figures.

SUB CODE: 11, 13/ SUBM DATE: 06Jul65/ ORIG REF: 004/ OTH REF: 006

Card 2/2 dda

KARETIN, L. N.: Master Agric Sci (diss) -- "Procedures for working cut-over scrub land in the northwest non-chernozem belt". Leningrad, 1958. 19 pp (Min Higher Educ USSR, Leningrad Agric Inst), 120 copies (KL, No 12, 1959, 130)

PHASE I BOOK EXPLOITATION SOV/4627

Karetin, Mikhail Andreyevich, Foreman of the State Order of Lenin Bearing Plant No. 4.

Mekhanizatsiya nekotorykh operatsiy v proizvodstve podshipnikov kacheniya (Mechanization of Some Operations in the Manufacture of Rolling Bearings)[Kuybyshev] Kuybyshevskoye knizhnoye izd-vo, 1959. 39 p. (Series: Ratsionalizatsiya izobretatel'stva) 2,000 copies printed.

Ed.: N. Ye. Petropol'skaya; Tech. Ed.: Ye. A. Yashen'kina.

PURPOSE: This booklet is intended for technical personnel of the bearing and machine-building industries.

COVERAGE: The author, foreman at the 4 gosudarstvennyy ordena Lenina podshipnikovyy zavod (State Order of Lenin Bearing Plant No. 4), has described his latest inventions and improvements relating to the equipment used in the manufacture of rolling bearings. The following personalities are mentioned: G. G. Domokurov, N. D. Orlov, V. A. Isayev, Yu. I. Sakharov and the young innovators V. S. Suzyumov, V. A. Chernov and Ye. P. Sakulin. F. Dorofeyev, Chief Engineer

Card 1/2

USSR / Soil Science. Cultivation. Melioration, Erosion. J

Abs Jour: Ref Zhur-Biol., No 21, 1958, 95779.

Author : Mednis, Ya. A.; Karetin, N. I.
Inst : Yaroslavl Agricultural Institute.
Title : Differential Plowing. (Preliminary Report).

Orig Pub: Tr. Yaroslavsk., s.-kh. in-ta, 1957, 4, 324-325.

Abstract: No abstract.

Card 1/1

KARP [illegible].

Role of Jurassic shift dislocations in the structure of the [illegible] synclinorium in the Urals. Dokl. AN SSSR 161 no.1:179-[illegible] '65. (MIRA 18:3)

1. Ural'skoye geologicheskoye upravleniye. Submitted August 13, 1964.

KARETNIKOV, T. Y., NIKITAYLOV, K. V., UKRAINAVA, S. V., And TOKOVSKAYA

"Compatibility of polymers in the solid state," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow. Mosk Khimmash. Inst., USSR.

B-3,084,305

MIKHAYLOV, N.V.; UKHANOVA, Z.V.; KARETINA, T.I.

Investigating solutions of polymer mixtures and factors determining their stability. Khim.volok. no.3:18-22 '59.
(MIRA 12:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (VNIIV).
(Polymers)

S/183/61/000/001/005/006
B101/B205

AUTHORS: Mikhaylov, N. V., Karetina, T. I., Pokrovskaya, N. B.

TITLE: Stability of solutions of chlorinated polyvinyl chloride mixed with nitrocellulose

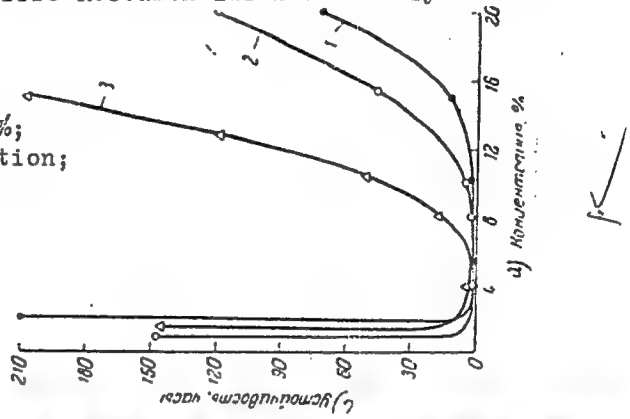
PERIODICAL: Khimicheskiye volokna, no. 1, 1961, 24-29

TEXT: A study has been made of the compatibility of different polymers in a common solution and of the practical use of polymers with new compositions for the purpose of checking data published in Ref. 9 on the compatibility of chlorinated polyvinyl chloride (CPVC) with acetyl cellulose. Solutions of CPVC and nitrocellulose (NC) have been studied at a ratio of CPVC:NC = 85:15, 50:50, or 15:85%. The stability of these solutions has been determined, and the distribution of the components on separation of the solution into various layers has been calculated by determining the N content of the upper layer. Like in the case of acetyl cellulose, these systems are unstable. The fact that the viscosity of the mixture is much higher than would correspond to the additive value is indicative of vigorous interaction between CPVC and NC. Fibers with the following data are

obtained from such solutions: elementary fiber count: 2200-4400; breaking length: 14-18 km; elongation: 18-29%; number of double flections leading to break: 900-1200. For the production of the fiber it was, however, necessary to determine the stability. Fig. 3 shows stability as a function of concentration. At concentrations of more than 20%, stability is sufficient for commercial use. Viscosity as a function of composition is compared in Fig. 5 with stability as a function of composition. Stability was determined visually. The visible separation into two layers was taken as the limit of stability. Chemical analysis has confirmed the visual observations. At a temperature of 90°C, separation into layers occurs within 2.5 hr. As the volumes of the separated layers depend on the content of the various components, a calibration curve may be used to determine the composition without chemical analysis. The incompatibility of the two components is confirmed by the constitution diagram of Fig. 8. Separation starts already at very low concentrations. It was found that polyvinyl chloride is almost incompatible with NC. Concerning the separation into layers, the following conclusions have been drawn on the strength of the Tyndall effect, the possibility of separating the components by centrifuging (the concentration of the two phases differs from that of the initial

phase), and of microscopic studies: Interaction occurs between solvent and components; the polymer with the higher solubility carries away a larger amount of the solvent when centrifuged; the solution of the components is a fine-disperse emulsion in which the dispersed substance is the polymer with the lower amount, whereas the dispersing agent is the solution of the polymer with the larger amount. There are 8 figures and 10 references: 9 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: VNIIV (All-Union Scientific Research Institute of Synthetic Fibers)



Legend to Fig. 3: CPVC:NC; 1: 85%:15%; 2: 50%:50%; 3: 15%:85%; a) concentration; b) stability, hr.

PONOMAREV, V.V.; KARETINA, T.I.

Sorption and desorption of vapors by wheat gliadin. Koll.zhur. 25 no.5:587-588 S-O '63. (MIRA 16:10)

KARETNIK, A. I., (Veterina · Surgeon, "Mariupo;" State Farm, Stalino Obla st')

Treatment of distemper with streptomycin and biomycin

Veterinariya vol. 38, no. 10, October 1961, pp. 81-89.

KARETNIK, A. I. (Veterinary Doctor, Rogatinsk Veterinary-Zootechnobgical Technicum, Stanislav Oblast').

"Fixation of swine"...

Veterinariya, vol. 39, no. 8, August 1962 pp. 50

PA 61T43

KARETNIKOV, A. D.

Feb 1948

USSR/Engineering
Tracks, Railroad
Tracking - Construction

"Partial Installation of Double Tracking," A. D. Karetnikov, Candidate Tech Sci, 3 pp

"Tekh Zhelez Dorog" No 2

Postwar plans call for large scale laying of double tracks, requiring great expenditure of metal, lumber, concrete, and materials vital to national economy. Surveys must be conducted with objective of determining locations where double tracks would serve best. Partial laying of double trackage would speed up transportation and not cause too great a drain of vital materials.

61T43

KARETNIKOV, A. D.

Etapnost perekhoda ot odnoputnoi linii k dvukhputnoi. [Gradul conversion of single-track to double track lines]. Moskva, Gos. transp. zhel-dor. izd-vo, 1949.
155 p. diagrs.

DLC: TR550.K27

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress REference Department, Washington, 1952, Unclassfied.

KARETNIKOV, A. D.

Public inspectors and their work in the field of railroad safety measures. Moskva, Gos. transp. zhel.-dor. izd-vo, 1950. 49 p. (51-22776)

HE1762.R9A5 1950

KARETNIKOV, A. D.

Osnovy tekhnologicheskogo protsessa raboty sortirovochnykh stantsiy (Principles of the tehcnological process of the work of marshalling yards, by) I. G. Tikhomirov i A. D. Karetnikov. Moskva, Transzheldorizdat, 1952.
215 p. Graphs, tables.

SO: N/5
755.42
.T5

KARETNIKOV, A.D., kand. tekh. nauk, dots.

Using Engineer Kovalev's method in intensifying the operation of sorting yards and accelerating the circulation of railroad cars. Sbor. trud. Akad. zhel. transp. no.1:72-85 '52. (MIRA 11:3)
(Railroads--Station service)

KARETNIKOV, A. D.

Grafik dvizheniya poyezdov na zheleznykh dorogakhSSSR (Diagram of train traffic on the USSR's railroads, by) A. V. Basov i A. D. Karetnikov. Moskva, Tranzheldorizdat, 1953. 247 p. diagrs., tables. Bibliography: p. (246)

SO: N/5
755.7
.B3

KARETNIKOV, A.D., kandidat tekhnicheskikh nauk

Train traffic schedules and problems of safety. Sbor. trud. Akad. zhel. transp. no.2:38-49 '53. (MLRA 8:9)
(Railroads--Traffic)

KARETNIKOV, A.D., kand. tekhn. nauk

Determining the effect of passenger trains on the traffic capacity of single-track lines. Zhel. dor. transp. 37 no.8: 44-48 Ag '55. (MIRA 12:8)

(Railroads--Traffic)

BENESHEVICH, I.I., kandidat tekhnicheskikh nauk; BOGIN, N.M., kandidat tekhnicheskikh nauk; BYKOV, Ye.I., inzhener; VLASOV, I.I., kandidat tekhnicheskikh nauk; GRITSEVSKIY, M.Ye., inzhener; GRUBER, L.O., inzhener GURVICH, V.G., inzhener; DAVYDOV, V.N., inzhener; YEFSHOV, I.M., kandidat tekhnicheskikh nauk; ZASORIN, S.N., kandidat tekhnicheskikh nauk; IVANOV, I.I., kandidat tekhnicheskikh nauk; KRAUKLIS, A.A., inzhener; KROTOV, L.N., inzhener; LAPIN, V.B., inzhener; LASTOVSKIY, V.P., dotsent, LAPUNIN, N.I., inzhener; MARKVARDT, K.G., professor, doktor tekhnicheskikh nauk; MAKHAYLOV, M.I., professor, doktor tekhnicheskikh nauk; NIKANOROV, V.A., inzhener; OSKOLKOV, K.N., inzhener; OKHOSHIN, L.I., inzhener; PARFENOV, K.A., dotsent, kandidat tekhnicheskikh nauk; PERTSOVSKIY, L.M., inzhener; POPOV, I.P., inzhener; PORSHNEV, B.G., inzhener; RATNER, M.P., inzhener; ROSSIYEVSKIY, G.I., dotsent, kandidat tekhnicheskikh nauk; RYKOV, I.I., kandidat tekhnicheskikh nauk; RYSHKOVSKIY, I.Ya., dotsent, kandidat tekhnicheskikh nauk; RYABKOV, A.Ya., professor [deceased]; TAGER, S.A., kandidat tekhnicheskikh nauk; KHAZEN, M.M., professor, doktor tekhnicheskikh nauk; CHERNYSHEV, N.A., doktor tekhnicheskikh nauk; SHIN, L.Ya., professor, doktor tekhnicheskikh nauk; YURGENEV, B.D., dotsent; AKSENOV, I.Ya., dotsent, kandidat tekhnicheskikh nauk; ARKHANGEL'SKIY, A.S., inzhener; BARTENEV, P.V., professor, doktor tekhnicheskikh nauk; BERNGARD, K.A., kandidat tekhnicheskikh nauk; BOROVOY, N.Ye., dotsent, kandidat tekhnicheskikh nauk; BOGDANOV, I.A., inzhener; BOGDAROV, N.K., kandidat tekhnicheskikh nauk; VIDNICHENKO, N.G., dotsent, kandidat ekonomicheskikh nauk;

(Continued on next card)

VASIL'YEV, V.F., GONCHAROV, N.G., inzhener; DERIBAS, A.T., inzhener; DOBROSEL'SKIY, K.M., dotsent, kandidat tekhnicheskikh nauk; DLUGACH, B.A., kandidat tekhnicheskikh nauk; IVYMOV, G.P., kandidat tekhnicheskikh nauk; ZEMBLINOV, S.V., professor, doktor tekhnicheskikh nauk; ZABELLO, M.L., kandidat tekhnicheskikh nauk; IL'IN, K.P., kandidat tekhnicheskikh nauk; KAROUNIKOV, A.D., kandidat tekhnicheskikh nauk; KAPLUN, Z.Sh., inzhener; KANSHIN, N.D., KOCHNEV, I.P., professor, doktor tekhnicheskikh nauk; KOGAN, L.A., kandidat tekhnicheskikh nauk; KUCHURIN, S.F., inzhener; LEVASHOV, A.D., inzhener; MAKSIMOVICH, B.M., dotsent, kandidat tekhnicheskikh nauk; MARTYNOV, M.S., inzhener; MEDEL', O.M., inzhener; NIKITIN, V.D., professor, kandidat tekhnicheskikh nauk; PADNYA, V.A., inzhener; PANTELEYEV, P.I., kandidat tekhnicheskikh nauk; PETROV, A.P., professor, doktor tekhnicheskikh nauk; POVCHOZHENKO, V.V., professor, doktor tekhnicheskikh nauk; PISKAREV, I.I., dotsent, kandidat tekhnicheskikh nauk; SEROKHEV, Ye.S., kandidat tekhnicheskikh nauk; SIMONOV, K.S., kandidat tekhnicheskikh nauk; SIMANOVSKIY, M.A., inzhener; SUYAZOV, I.G., inzhener; TAIDAYEV, F.Ya., inzhener; TIKHONOV, K.K., kandidat tekhnicheskikh nauk; USHAKOV, N.Ye., inzhener; USPENSKIY, V.K., inzhener; FEL'DMAN, B.D., kandidat tekhnicheskikh nauk; FERAPONTOV, G.V., inzhener; KHOKHLOV, L.P., inzhener; CHERNOKORDIK, G.I., professor, doktor tekhnicheskikh nauk; SHAMAYEV, M.F., inzhener; SHAPIRKIN, B.I., inzhener; YAKUSHIN, S.I., inzhener; GRANOVSKIY, P.G., redaktor; TISHCHENKO, A.I., redaktor; ISAYEV, I.P., dotsent, kandidat tekhnicheskikh nauk, redaktor; KLIMOV, V.Y., dotsent, kandidat tekhnicheskikh

(Continued on next card)

BENESHEVICH, I.I. (continued) Card 3.

nauk, redaktor; MARKOV, N.V., zasluzhennyy, redaktor; KALININ, V.K., inzhener, redaktor; STEPANOV, V.N., professor, redaktor; SIDOROV, N.I., inzhener, redaktor; GERONIMUS, B.Ye., kandidat tekhnicheskikh nauk, redaktor; ROBEL', R.I., otvetstvennyy redaktor

[Technical reference manual for railroad engineers] Tekhnicheskii spravochnik zheleznodorozhnika. Moskva, Gos. transp.zhel-dor. izd-vo. Vol.10. [Electric power supply for railroads] Energosnabzhenie zheleznykh dorog. Otv.red. toma K.G.Markhaver. 1956. 1080 p. Vol.13. [Operation of railroads] Ekspluatatsiia zheleznykh dorog. Otv. red. toma R.I.Robel'. 1956. 739 p. (MLRA 10:2)

1. Chlen-korrespondent Akademii nauk SSSR (for Petrov)
(Electric railroads) (Railroads--Management)

MIKHEYEV, A.P., professor, doktor tekhnicheskikh nauk; KARETNIKOV, A.D., kandidat tekhnicheskikh nauk.

Characteristics of operating railroads with diesel locomotives traction. Zhel.dor.transp. 37 no.5:26-32 My '56. (MLRA 9:8)
(Diesel locomotives) (Railroads--Management)

KARETNIKOV, A.D., kandidat tekhnicheskikh nauk.

Unused resources for increasing the commercial speed on single-track lines. Zhel.dor.transp. 38 no.10:31-34 O '56. (MLRA 9:11)
(Railroads--Management)

KARETNIKOV, A.D., kandidat tekhnicheskikh nauk.

Effect of various factors on the rate of commercial speed of freight trains on single track lines. Vest.TSNII MPS no.2:51-54 Mr '57. (MLRA 10:4)

(Railroads--Management)

ZEMBLINOV, S.V., prof., doktor tekhn. nauk; SEDOV, V.I., inzh.; KARETNIKOV, A.D., red.; KHITROV, P.A., tekhn. red.

[Graphic method of calculation for planning stations and junction points] Graficheskii raschet stantsii i uzlov. Moskva, Gos. transp. zhel-dor. izd-vo, 1950. 42 p. (MIRA 15:3)
(Railroad engineering)

KARETNIKOV, A.D., kand.tekhn.nauk; VOROB'YEV, N.A., kand.tekhn.nauk; PETROVA, V.L., inzh.red.; BOBROVA, Ye.N., tekhn.red.

[Improvement of train sheets and better utilization of the traffic capacity of railroad lines] Sovershenstvovanie grafika dvizheniia poezdov i uluchshenie ispol'zovaniia propusknoi sposobnosti zheleznodorozhnykh linii. Moskva, Vses.izdatel'sko-poligr. ob"edenie m-va putei soob., 1960. 218 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.203). (MIRA 14:5)

(Railroads--Traffic)

KARETNIKOV, A.D.

KARETNIKOV, A.D., kand.tekhn.nauk.

Ways of decreasing the traffic capacity loss on heavily utilized two-track lines. Zhel. dor. transp. 40 no.1:19-22 Ja '58. (MIRA 11:1)
(Railroads--Traffic)

KARETNIKOV, A.D., kand.tekhn.nauk

Coordinating train schedules with track and contact line maintenance work. Vest. TSNII MPS [17] no.7:7-11 N '58. (MIRA 11:12)

(Railroads--Timetables) (Railroads--Maintenance and repair)

KARETNIKOV, D.S.

Adjustment of the magnetic system of a local track element in a DSR relay. Avtom.telem.i sviaz' 3 no.10:40 O '59.
(MIRA 13:2)

1. Nachal'nik elektrotekhnicheskikh masterskikh signalizatsii i svyazi Severnoy dorogi.
(Electric relays) (Railroads--Electronic equipment)

KARETNIKOV, A.D., kand.tekhn.nauk

Determining the most advantageous speed ratio of passenger and freight trains. Zhel.dor.transp. 41 no.12:37-40 D '59. (MIRA 13:4)
(Railroads--Train speed)

BASOV, Aleksey Vasil'yevich; KARETNIKOV, Aleksey Dmitriyevich; BERNGARD, K.A., red.; BOBROVA, Ye.N., tekhn.red.

[Train sheets] Grafik dvizheniia poezdov. Izd.2., perer. i dop. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 314 p. (MIRA 13:9)
(Railroads--Traffic)

KARETNIKOV, A.D., kand.tekhn.nauk

Efficient spacing of passing points in planning train sheets for two-train lines. Vest.TSNII MPS 19 no.1:27-32 '60.
(MIRA 13:4)
(Railroads--Traffic)

BARANOV, A.M., kand.tekhn.nauk; KARETNIKOV, A.D., kand.tekhn.nauk;
VOROB'YEV, N.A., kand.tekhn.nauk

Important particular characteristics of traffic organization for trains with electric traction. Zhel.dor.transp. 42 no.7:44-48 Jl '60. (MIRA 13:7)
(Electric railroads—Management)

KARETNIKOV, A. D.

Doc Tech Sci - (diss) "Study of problems of improving charts of train movements." Moscow, 1961. 24 pp; (Ministry of Railroads USSR, Moscow Order of Lenin and Order of Labor Red Banner Inst of Railroad Transport Engineers imeni I. V. Stalin); 200 copies; free; (KL, 6-61 sup, 211)

KARETNIKOV, A.D., kand.tekhn.nauk

High speeds of train traffic and improvement of the transportation process. Zhel.dor.transp. 43 no.11:26-31 N '61.
(MIRA 14:11)
(Railroads--Train speed)

BARANOV, A.M., kand.tekhn.nauk; KARETNIKOV, A.D., kand.tekhn.nauk

New developments in the calculation of railroad traffic capacity.
Zhel.dor.transp. 44 no.1:47-51 Ja '62. (MIRA 14:12)
(Railroads--Traffic)

KARETNIKOV, A.D., doktor tekhn.nauk; ASHUKIN, D.D., kand.tekhn.nauk;
VOROB'YEV, N.A., kand.tekhn.nauk; TISHKIN, Ye.M., inzh.

How to organize the local operations on lengthened haul distances. Zhel.dor.transp. 44 no.8:55-59 Ag '62.
(MIRA 15:8)

(Railroads—Management)

KARETNIKOV, A.D., doktor tekhn.nauk, prof.; VOROB'YEV, N.A., kand.tekhn. nauk; CHERNYUGOV, A.D., inzh.

Efficient method for staged lengthening of station tracks. Vest. TSNII MPS 22 no.5:6-11 '63. (MIRA 16:8)
(Railroads--Track)

KARETNIKOV, A.D., prof., doktor tekhn.nauk

Some problems in the further increase of passenger train speeds. Zhel. dor.transp. 45 no.9:16-20 S '63. (MIRA 16:9)
(Railroads—Train speed)

KARETNIKOV , A.D., doktor tekhn. nauk, red.; KOMAROV, A.V., doktor tekhn. nauk, red.; SITNIK, M.D., kand. tekhn. nauk, red.; PREDE, V.Yu., inzh., red.

[Coordination of the work of the various types of transportation] Koordinatsiia raboty razlichnykh vidov transporta. Moskva, Izd-vo "Transport," 1964. 199 p. (MIRA 17:4)

KARETNIKOV, A.D., prof., doktor tekhn. nauk; VOROB'YEV, N.A., kand. tekhn. nauk

Introduce the new advanced practices in the preparation of train sheets. Zhel. dor transp. 47 no.3:3-9 Mr '65. (MIRA 18:5)

KARETNIKOV, A.N., prof., doktor tekhn. nauk

Efficient development and utilization of the carrying capacity.
Znel. dor. transp. 47 no.8:3-7 Ag '65. (MIRA 18:9)

KARETNIKOV, A.P.

Wintertime maintenance of roads by the efforts of the DRP. Avt.dor. 19 no.9:17 S '56. (MLRA 9:11)

(Roads--Maintenance and repair)

KARETNIKOV, D.S., inzhener.

Turbodrill for shaft sinking by the freezing method. Shakht. stroi. no.3:17-19 Mr '57. (MIRA 10:7)
(Shaft sinking) (Turbodrills)

KARETNIKOV, D.S.

Device for determining the spacing of pulses and their duration in transmitters. Avtom., telem.i sviaz' 3 no.7:34 Jl '59. (MIRA 12:12)

1. Nachal'nik elektrotekhnicheskikh masterskikh signalizatsii i svyazi Severnoy dorogi.
(Radio--Transmitters and transmission)
(Radio--Measurements)

KARETNIKOV, D.S.

New method of insulator armoring in OM type transformers.
Avtom., telem.i sviaz 3 no.9:41 S '59. (MIRA 13:2)

1. Nachal'nik elektrotekhnicheskikh masterskikh signalizatsii i svyazi Severnoy dorogi.
(Electric transformers)

KARETNIKOV, D.S.

The UTZ-2 turbodrilling unit for drilling freezing wells.
Biul.tekh.-ekon.inform. no.2:3 '60. (MIRA 13:6)
(Turbodrills)

KARETNIKOV, D.S.; BUZO, N.A., inzh., retsenzent; MARENKOVA, G.I., inzh., red.; USENKO, L.A., tekhn. red.

[Air-membrane pedal; layout, maintenance, and adjustment] Vozdushno-membrannaia pedal' ustroistvo, obsluzhivanie i regulirovka. Moskva, "Transport," 1964. 29 p. (MIRA 17:3)

MALTNIKOV, D.S.

The ULB-3,6r unit for drilling mine shafts. Biul. tekh.-ekon. inform. no. 2:8-9 '61. (MIRA 14:2)
(Boring machinery)

KARETNIKOV, D.S.

Repair of OM-type transformers by the railroad districts. Avtom., telem.i sviaz' 6 no.5:27-30 My '62. (MIRA 15:4)

1. Nachal'nik elektrotekhnicheskikh masterskikh Severnoy dorogi.
(Electric transformers--Repairing)
(Railroads--Electric equipment)

82910

21,2300 S/120/60/000/02/041/052
E140/E335

AUTHORS: Yegorov, V.A., Karetnikov, D.V. and Popov, S.N.

TITLE: Measurement of Ion Current in Ion Accelerators

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 2, pp 146 - 148 (USSR)

ABSTRACT: Electron-optical systems for direct measurement of high-energy ion beams are unsatisfactory because of secondary emission of electrons, ionisation of residual gas, etc. Curves 1 and 3 of Figure 2 give examples of variation of measured current (for fixed true current) against variation of the retarding potential intended to prevent secondary electron emission effects. The authors propose the use of a calorimetric method. The ion collector is cooled by circulating water, the volume and temperature change of which are accurately measured. The energy associated with secondary effects is small in comparison with the energy of the accelerated electrons. Curve 2 of Figure 2 indicates the freedom of this method from secondary emission effects. A precision of 10% is claimed. V. Vasyukov participated in the work.

Card1/2

82910

S/120/60/000/02/041/052

E140/E335

Measurement of Ion Current in Ion Accelerators

There are 3 figures and 4 references, 1 of which is Soviet and 3 are German.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Chemical Physics Research Institute of the Ac.Sc., USSR)

4

SUBMITTED: February 3, 1959

Card 2/2

S/115/60/000/06/17/031
B007/B014

AUTHORS: Geraskin, V. M., Karetnikov, D. V.

TITLE: A Contactless Remote-measuring System for Measuring Parameters of High-voltage Circuits

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 6, pp. 33-35

TEXT: The authors describe a contactless one-channel system developed by them for remote measurement of eight separately transmitted parameters. In this system, the photoelectric method with light modulation by means of a TMN-2 (TMN-2) tube is used. Only the simplest connections of the pulse technique from the domestic series production are used. This system was used for remote measurement of eight parameters of the ion source of a high-voltage tube. For the purpose of transmission, all measured quantities were transformed into a voltage varying between 0 and +10 v by means of simple transmitters. The circuit diagram of this system is illustrated in Fig. 1. In order to secure an undisturbed operation of the demodulators, the pulses were shaped in accordance with Shmidt's suggestion (Ref. 8). Fig.2 shows the characteristic $I_{output} = f(U_{input})$ of the first channel of this

JUN 25 1963

PHASE I BOOK EXPLOITATION SOV/6234

Karetnikov, D. V., I. N. Slivkov, V. A. Teplyakov, A. P. Fedotov, and B. K. Shembel'.

Lineynyye uskoriteli ionov (Linear Ion Accelerators). Moscow, Gosatomizdat, 1962. 207 p. Errata slip inserted. 5000 copies printed.

Ed.: A. I. Voronova; Tech. Ed.: S. M. Popova.

PURPOSE: This book is intended for nuclear physicists and engineers designing particle accelerators.

COVERAGE: The book contains a systematized explanation of the theory, design, and construction of linear ion accelerators. The following personalities are mentioned: K. D. Sinel'nikov, N. N. Semenov, A. L. Mints, A. I. Akhiyezer, Ya. B. Faynberg, V. V. Vladimirskiy, A. S. Kompaneyets, A. D. Vlasov, P. M. Zeydlits, I. L. Zel'manov,

Card 1/[illegible] 2

Linear Ion Accelerators SOV/6234

I. Kh. Nevyazhskiy, Ya. S. Shutskever, L. I. Bolotin, Ye. G. Komar, B. M. Gokhberg, and V. N. Glazanov. There are 177 references, approximately half Soviet and half Western, the latter chiefly English and American.

TABLE OF CONTENTS

Card 2/7

L 58987-65 EWT(1)/EPA(sp)-2/EPF(c)/EPA(w)-2 Pt-4/Peb AT

ACCESSION NR: AP5019021 UR/0286/65/000/012/0044/0045
533.9.07

38
B

AUTHOR: Shembel', B. K.; Karetnikov, D. V. 21

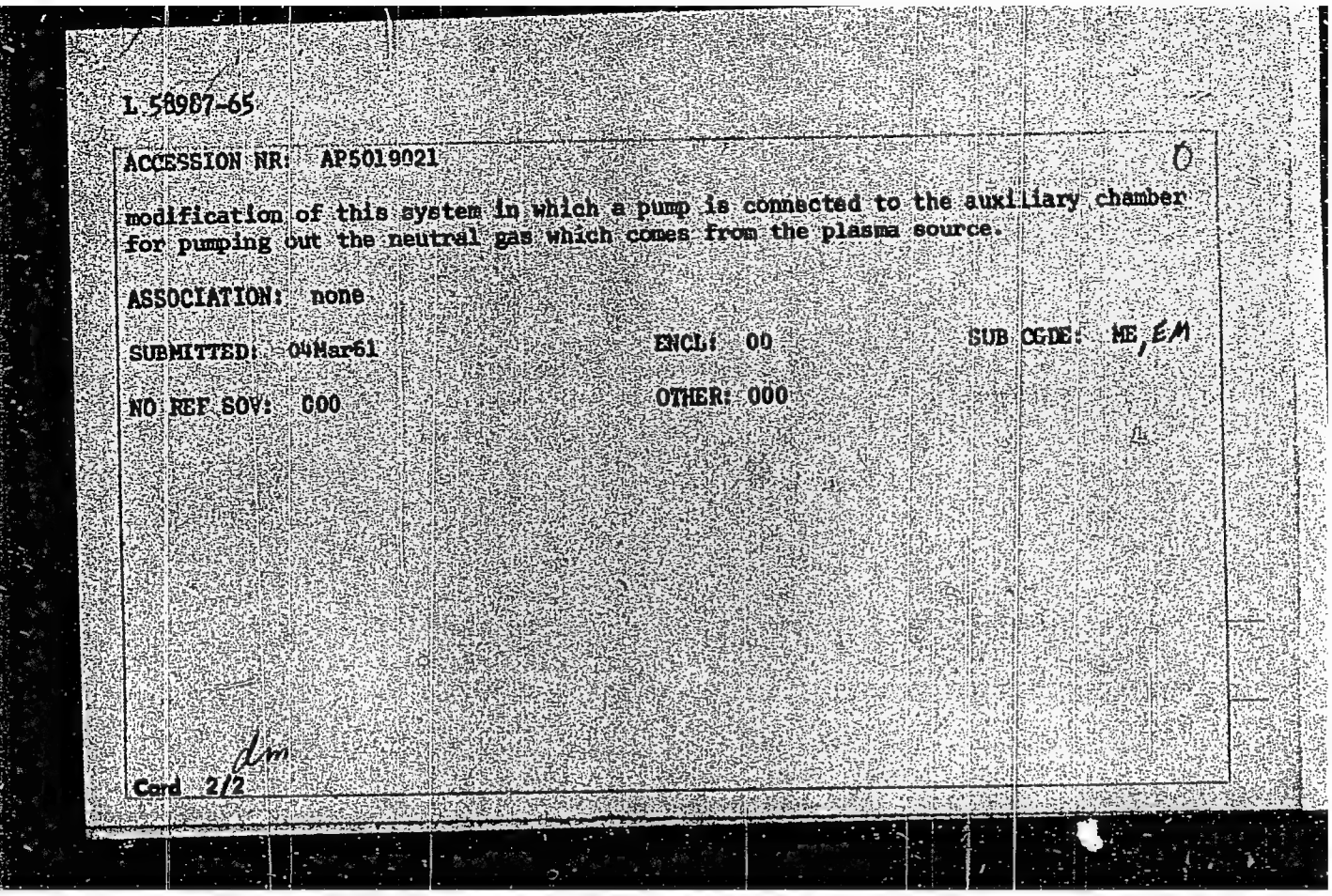
TITLE: An evacuation pumping system for ion sources. Class 21, No. 171944

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 44-45

TOPIC TAGS: ion source, plasma source, vacuum pump

ABSTRACT: This Author's Certificate introduces: 1. An evacuation pumping system for ion sources. The system contains a plasma source, a chamber for shaping the ion beam and exhaust pumps. The system is designed for increasing the substance utilization factor (the ratio of the quantity of ionized gas to the total quantity of gas which is fed into the beam shaping chamber) and for improving the vacuum in the chamber between the plasma source and the beam forming chamber. An auxiliary chamber is used which is located in a strong longitudinal magnetic field. This auxiliary chamber has emission apertures along the axis of plasma motion. The vacuum in this auxiliary chamber is softer than in the plasma source, but harder than in the beam shaping chamber. 2. A modification of this system in which a source with a directional plasma stream is used, e.g. a source with a very deep emission zone. 3. A

Card 1/2



L 58987-65

ACCESSION NR: AP5019021 0

modification of this system in which a pump is connected to the auxiliary chamber for pumping out the neutral gas which comes from the plasma source.

ASSOCIATION: none

SUBMITTED: 04Mar61 ENCL: 00 SUB CODE: ME, EM

NO REF SOV: 000 OTHER: 000

Card 2/2

KARETNIKOV, G. S.

USSR/ Chemistry Physical chemistry

Card : 1/1 Pub. 147 - 23/25

Authors : Karetnikov, G. S.

Title : The presence of non-dissociated molecules in concentrated HCl solutions

Periodical : Zhur. fiz. khim. 28/7, 1331 - 1335, July 1954

Abstract : The presence of non-dissociated molecules, in concentrated HCl solutions, was determined on the basis of combined diffusion spectra of the HCl solutions. The results are in perfect conformity with the theoretical data regarding the solvation of ions in electrolyte solutions. The coordination numbers for ions, i.e., number of H_2O molecules forming a perfectly stable hydrate shell around the ion, were computed by the K. P. Mishchenko method. Nine references: 3 USSR; 3 French and 3 USA (1927 - 1952). Table; graphs.

Institution : The D. I. Mendelyev Chemical Technological Institute, Moscow

Submitted : February 12, 1954

KARETNIKOV, G.S.; BARTINI, G.R.

Recording device for microphotometers. Zav. lab. 23 no.5:635-636 '57. (MIRA 10:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(Microphotometers--Attachments)

KARPENKOV, G.S., Cand Chem Sci --(diss) "Study of the intermolecular interaction in solutions of certain polar cumyl ~~ethers~~ and hydrogen chloride in methyl alcohol by means of ~~spectra~~ combination diffusion spectra." Len, 1958. 6 pp (Min of Higher Education USSR. Len Order of Lenin Chem-Technological Inst im D.I.Mendeleyev), 150 copies (KL,46-58,138)

- 6 -

KARETNIKOV, G.S.

Raman spectrum study of methyl alcohol solutions of hydrogen chloride. Nauch. dokl. vys. shkoly; khim. i khim. tekh. no.2:213-215 '58.
(MIRA 11:6)

1. Predstavlena kafedroy fizicheskoy khimii Moskovskogo khimiko-tekhnologicheskogo instituta im. D.I. Mendeleyeva.
(Hydrochloric acid--Spectra)

[illegible], I. V 156-[illegible]

[illegible] on [illegible] by Means of the Combination [illegible] of Light [illegible] (Izucheniye [illegible] metodom [illegible] sveta)

Nauchnyye [illegible] vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. [illegible] (USSR)

[illegible] knowledge of the structure of solutions [illegible] the development of the thermodynamics and the kinetics of reactions in solutions. Spectra of the light dispersion, [illegible] mentioned in the title, make it possible to determine the [illegible] oscillations. [illegible] brought about [illegible] interaction of molecules of the solvent with the molecules of the dissolved substance causing [illegible] change in frequency of the [illegible] oscillation. However, [illegible] experimental determination of [illegible] difficult. [illegible] substance either in liquid or [illegible] state behave differently from one another the authors [illegible] to [illegible] in [illegible] for the study of [illegible] in [illegible]

[illegible]

by [illegible] of the [illegible]

[illegible] the [illegible] b-
[illegible]. The [illegible] investigated [illegible]
[illegible] of aqueous solutions of methanol, [illegible]
[illegible] over a large range of concentration. The [illegible]
[illegible] was measured for all solutions, i.e., the [illegible]
[illegible] from the frequency of the oscillation in [illegible]
[illegible] the solution [illegible] the frequency in solid [illegible] $\Delta\omega$ [illegible].
The results are graphically represented in [illegible]
[illegible] with it we see that the absolute value $\Delta\omega$ [illegible]
gradually with an increasing concentration of water.
[illegible] as if it is due to the formation of a hydrate cover
around the molecules of the dissolved substance. [illegible]
the total percentage of water in this system [illegible]
increased number of polar molecules of water forming the
[illegible] of the dissolved substance. [illegible]
[illegible] one another are deformed in a definite order. Finally
a point is reached at which the deformative effect of the
[illegible] cover ends. This is the reason that further increase
in concentration of water entails no additional deformation
of molecules of the dissolved substance. There are [illegible],

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Studies on Hydration by Means of the Combination Scattering of Light
Method

1 table, and 7 references, 4 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva
(Chair of Physical Chemistry of the Chemical and Technical Institute imeni D. I. Mendeleyev, Moscow)

SUBMITTED: September 16, 1957

Card 3/3

AUTHOR: Karetnikov, G. S. SOV/156-59-2-5/48

TITLE: Concerning Studies of Spectra of Combination-Light-Dispersion of Hydrogen Chloride Solutions in Methyl Alcohol (Issledovaniya spektrov kombinatsionnogo rasseyaniya rastvorov khloristogo vodoroda v metilovom spirte)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 2, pp. 213-215 (USSR)

ABSTRACT: The bands and spectral lines of a solvent are shifted when an electrolyte is dissolved (Ref 1). This is explained by a weakened bond between the molecules of the solvent. A survey of pertinent publications is given. (Refs 2-8). The analysis of these spectra was carried out by the author and was based on tables compiled by himself (Ref 9). Figure 1 shows the results. Based upon these results the author makes the following statements: 1) Investigations of the dependence of the frequency of oscillations in the methyl-alcohol molecule on the concentration of hydrogen chloride were carried out. 2) It was noticed that the frequency of oscillation of the C-O bond decreases in concentrated solutions of hydrogen chloride, whereas the same frequency of the C-H bond increases.

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SOV 156-58-2-3/43

Concerning Studies of Spectra of Combination-Light-Dispersion of Hydrogen Chloride Solutions in Methyl Alcohol

3) If the solution is diluted down to 4 - 5 CH_3OH moles per one HCl-mole, lines will turn up which correspond to the frequency of oscillation in pure methanol. 4) A further line was discovered in the spectrum of the combination-light-dispersion of the solution. The line is likely to be attributed to the oscillation of the CH_3OH-HCl bond. There are 1 figure and 11 references, 5 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva
(Chair of Physical Chemistry of the Chemical and Technological Institute imeni D. I. Mendeleyev, Moscow)

SUBMITTED: September 16, 1957

Card 2/2

AUTHOR: Karetnikov, G. S. 76-32-3-16/43

TITLE: An Investigation of the Phenomenon of the Hydration of Methanol by the Raman Effect
(Issledovaniye yavleniya gidratatsii metilovogo spirta metodom kombinatsionnogo rasseyaniya sveta)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 3, pp. 603-607 (USSR)

ABSTRACT: In the years 1921 and 1929, A. A. Lebedev (refs 1,2) and Stewart (refs 3,4) respectively proved by radiographic methods that liquids possess a quasi-crystalline structure, while V. I. Danilov (ref 5) made analogous observations (ref 5). After a consideration of the investigations in the domain of structure research hitherto performed, a schematic representation of the hydrogen bonds in the alcohol molecule is given in which every OH-group is under the influence of two hydrogen bonds. The spectrographic investigations are rendered difficult by the accumulation of individual lines in the OH-spectral band. In investigations of aqueous methanol solutions, Krishnamurty pointed out the displacement of the spectral line,

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corresponding to the valence vibrations of the C-O bond, [illegible] of . These investigations were repeated by Koroku and Nakamura (refs 10,21) who explained the change of spectrum in the solution by the hydration of the alcohol molecules. In the present work, Raman spectral investigations in a wide concentration range of aqueous methanol solutions were performed. It follows from the given experimental method that a three-prism spectrograph ISP -51 and an Hg-quartz lamp PRK -2 were used. In order to attain a shorter time of exposition, the spectra were taken without a filter. Each of them was registered on a slightly modified self-recording microphotometer MF-2. This modification was performed by the author together with G. R. Bartini (ref 24). From the results of investigation, it follows that the displacement of spectral lines is to be ascribed to the hydration of the methanol molecules, and that the C-O and C-H vibrations in methanol depend on the concentration, so that an increase in concentration of water weakens the C-O bond and strengthens the C-H bond. A ratio of 4:1, H_2O-CH_3OH is given as the maximum limit, at which the

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influence of the hydrate cover upon the C-H bond stops; in that connection it is stated that 7 H_2O molecules penetrate into the hydration cover of one CH_3OH molecule.

The author thanks Professor S. V. Gorbachev for his advice.

There are 2 figures, 2 tables, and 24 references, 19 of which are Soviet.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva, Moskva (Moscow, Chemical-Technological Institute imeni D. I. Mendeleyev)

SUBMITTED: November 12, 1956

Card 3/3

AUTHOR: Karetnikov, G. S. 76-32-4-8/43

TITLE: The Investigation of the Raman Spectra of Hydrogen Chloride Solutions in Methanol (Izucheniye spektrov kombinatsionnogo rasseyaniya rastvorov khloristogo vodoroda v metilovom spirte)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4, pp. 782 - 784 (USSR)

ABSTRACT: In the previous paper the influence of polar molecules on the Raman spectrum of methanol was investigated; as, however, the influence of charged ions is of special interest the investigation mentioned in the title is carried out in the present paper. A. I. Brodskiy (Reference 1) investigated already the influence of electrolytes on the Raman spectrum of solutions, while Hibben (Reference 4) as well as Ochs, Gueron and Magat (Reference 5) dealt with the determinations of the Raman spectra of aqueous solutions. Vast experimental material in this field was supplied by Goublau (Reference 7,8) as well as by M V Vol'kenshteyn who observed changes of spectral lines in the investigation of the influence of hydrogen chloride on methanol.

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The Investigation of the Raman Spectra of Hydrogen Chloride Solutions in Methanol

From the experimental data of the present paper can be seen that the same methods as in the previous work were used, the concentrations having been determined by titration and the spectra having been taken on an ИСП -51 spectrograph. From the investigation results can be seen that observations by M. V. Vol'kenshteyn were proved, the influence of the positively charged hydrogen ions being given as explanation. The assumption that the δ-position of the spectral lines remains constant as the influence of the electric field of the ions is independent from the dipole number was proved experimentally. It is assumed that the occurrence of spectral lines of pure methanol is to be traced back to a formation of methanol molecules which do not enter the solvation shell of hydrogen ions. Finally the author thanks S. V. Gobachev for his hints. There are 2 figures and 10 references, 4 of which are Soviet.

76-32-4-8/43

The Investigation of the Raman Spectra of Hydrogen Chloride Solutions in Methanol

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva, Moskva (Moscow Chemical-Technological Institute imeni D. I. Mendeleyev)

SUBMITTED: November 24, 1956

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1. Hydrogen chloride--Spectra 2. Solutions--Raman spectrum
3. Raman Spectroscopy 4. Methanol--Applications

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